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NOTES FROM PACIFIC COAST OBSERVATORIES.

NOTES ON THE ECLIPSE EXPEDITION TO FLINT ISLAND.

The personnel of the Crocker Eclipse Expedition to Flint Island will consist of Director CAMPBELL, Astronomer PERINE, Astronomer AITKEN, Assistant ALBRECHT, of the Lick Observatory Staff, and Professor E. P. LEWIS, of the Department of Physics of the University of California. The observers of the Smithsonian Institution Expedition will consist of Director C. G. ABBOT and Mr. ALFRED MOORE, of the University of California. The carpenter, two workmen, cook, and cook's assistant will bring the total number up to twelve, to which the Commander of the U. S. gunboat "Annapolis" desired the party to be limited.

The expedition expects to sail from San Francisco on November 22d, and return on January 25th.

F. K. McCLEAN, Esq., of Tunbridge Wells, England, expects to carry an expedition to Flint Island in a chartered vessel. It will be a pleasure for us to have him and his colleagues as associates on the island.

Meteorological data collected during the month of January, 1907, are very encouraging. The eclipse will occur at about 11:18 A.M. At this hour of the day the sky was clear and fine on about twenty-two days in the month.

Mt. HAMILTON, September 23, 1907. W. W. CAMPBELL.

SPECTRA OF THE LIMB AND CENTER OF THE SUN.

In a comparative study of the spectrum of the Sun at the center and near the limb, the following points of difference have been found:—

1. The great majority of the lines that are strengthened in sun-spots are strengthened near the limb.
2. The great majority of the lines that are weakened in spots are weakened near the limb.

3. Most of the lines are slightly widened.
4. The wings of diffuse lines are greatly reduced.
5. In agreement with HALM, most of the lines are shifted toward the red.
6. The amount of the shift varies for different lines of the same element.
7. The lines of the ultra-violet cyanogen fluting are not shifted.

In general, while the results so far obtained point to increased effective pressure near the limb (HALM's explanation) as the probable cause of the line-shifts, judgment is reserved until the completion of laboratory experiments now in progress.

September, 1907. GEORGE E. HALE, and WALTER S. ADAMS.

PRELIMINARY PHOTOGRAPHIC MAP OF THE SUN-SPOT SPECTRUM.

A photographic map, extending from $\lambda 4600$ to $\lambda 7200$, and consisting of 26 sections of 100 Angströms each, has recently been made by Mr. ELLERMAN from the Mt. Wilson negatives of sun-spot spectra. The original negatives were made with the Littrow-grating spectrograph, of eighteen feet focal length, used with the Snow telescope. Each section of the spot spectrum, after being enlarged on a plate moving in the direction of the lines (by the pendulum process frequently employed for widening stellar spectra), is printed alongside the corresponding region of the normal solar spectrum. An approximate scale of wave-lengths, merely for the identification of lines, and not for the determination of their positions, also appears on each section. It is expected that a more perfect map can be issued later. This is intended to supply the immediate needs of visual observers of spot spectra, and has been placed in the hands of those who are taking part in the work set on foot by the International Union for Co-operation in Solar Research.

GEORGE E. HALE.

September, 1907.

SIX STARS WHOSE RADIAL VELOCITIES VARY.

The following stars have been shown to have variable radial velocities, by photographs taken with the Mills spectrograph at Mt. Hamilton. The approximate range of speed observed